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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

MAHATAN, CHANNING

ART UNIT	PAPER NUMBER
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1631

DATE MAILED: 03/25/2003

LP

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/643,407

Applicant(s)

PEER ET AL.

Examiner

Channing S. Mahatan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 33-64 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 33-64 is/are rejected.
- 7) ☒ Claim(s) 44 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) 1 Sheet
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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DETAILED ACTION

APPLICANTS' ARGUMENTS

Applicants' arguments in Paper No. 16, filed 16 January 2003, have been fully considered but they are not deemed to be persuasive for the reasons set forth below. Rejections and/or objections not reiterated from previous office actions are hereby withdrawn. The following rejections and/or objections are either reiterated or newly applied. They constitute the complete set presently being applied to the instant application. Additionally, upon further consideration of arguments in Paper Nos. 8 and 13, filed 23 November 2001 and 20 April 2002, respectively, and the disclosure the FIRST, SECOND, and THIRD SPECIES ELECTION REQUIREMENTS in Paper No. 7, mailed 22 October 2001, is now vacated.

CLAIMS UNDER EXAMINATION

Claims herein under examination are claims 33-64.

Claims Rejected Under 35 U.S.C. § 112 1st Paragraph

The following is a quotation of the first paragraph of 35 U.S.C. § 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 38, 43, and 57 are rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

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NEW MATTER

Claims 38 (line 3), 43 (lines 8 and 12), and 57 (line 3) are rejected under 35 U.S.C. § 112, first paragraph because of the following equations:

Claim 38 recites

$$L^e(\hat{T}) = \prod_{\vec{x} \in E} P_{\hat{T}(\vec{x})}(\vec{x})$$

Claim 43 recites

$$S^u[\vec{y}, j] = L^{(j)}[y_{k-1}, h_j] + \max_{e=(\vec{z}, \vec{y}) \in E} \{S^u[z, j-1] + \omega(e)\}$$

and

$$S^u[H[\vec{y}, j], j-1] + \omega((H[\vec{y}, j], \vec{y})) = \max_{e=(\vec{z}, \vec{y}) \in E} \{S^u[z, j-1] + \omega(e)\}$$

Claim 57 recites

$$\underline{L}^e(\hat{T}) = \prod_{\vec{x} \in E} P_{\hat{T}(\vec{x})}(\vec{x})$$

The introduction of the above equations in newly amended claims 38, 43, and 57 in Paper No. 13, filed 20 April 2002, is considered new matter. The above equations could not be found throughout the lengthy specification. Applicants are required to particularly point to page and line number for support of the above equations. Therefore, the introduction of the above equations is considered NEW MATTER. It is acknowledged the equations listed above maybe

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the result of typographical and were added in Paper No. 13, filed 20 April 2002, unintentionally.

If such is the case proper correction is required.

Claims Rejected Under 35 U.S.C. § 112 2nd Paragraph

The following is a quotation of the second paragraph of 35 U.S.C. § 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 33-64 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

VAGUE AND INDEFINITE

Claim 33 (lines 2-5), 63 (lines 3-6), 64 (lines 3-6), and all claims dependent therefrom are indefinite due to the lack of clarity of the claim language failing to recite a final process step, which agrees back with the preamble. The preamble states "the nucleotide sequences being indicative of a sequence of a target polynucleotide molecule T", however the claim recites a final step "selecting one or more candidate nucleotide sequences having an essentially maximum score". The final step fails to indicate whether the selection of one or more candidate nucleotide sequences having an essentially maximum score is indicative of a sequence of a target polynucleotide. While minor details are not required in method/process claims, at least the basic step must be recited in a positive, active fashion. Clarification of the metes and bounds of the claim is requested via clearer claim wording.

Claims 33 (line 22), 43 (line 3), 44 (line 3), 63 (line 23), 64 (line 25-26), and all claims dependent therefrom recite the phrase "essentially maximal score" which is vague and indefinite. It is unclear as to the metes and bounds by which applicants assert an "essentially maximal

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score" to be, thus, implying a range or criteria for selection. Applicants can resolve this issue by particularly pointing out the limitations, which encompasses said "essentially maximal score".

Clarification of the metes and bounds, via clearer claim language, is required.

Claims 46, 48, 49, 50, and all claims dependent therefrom recite "Algorithm B", "Algorithm C", "Algorithm D", respectively which is vague and indefinite. While it is acknowledged that the specification on pages 15-22 indicates several denoted equations for the above said algorithms, it is unclear whether the equations as a whole are to be performed in a particular order or whether an equation individually represents an algorithm. For example, "Algorithm B" (page 15-17) lists equations denoted as (19), (20), (21), (22), and (23), however it is unclear whether "Algorithm B" (as claimed) represents all of the equations in sequential order or the only one equation listed. Clarification of the metes and bounds, via clearer claim language, is required.

LACK OF ANTECEDENT BASIS

Claim 51 recites the limitation "wherein the algebraic equation (12a') replaces the algebraic equation (12a), the algebraic equation (12b') replaces the algebraic equation (12b), the algebraic equation (15') replaces the algebraic equation (15), and the algebraic equation (16') replaces the algebraic equation (16)" on lines 1-4. There is a lack of antecedent basis for this limitation in the claim as to the referred equation(s).

Claim 52 recites the limitation "wherein the algebraic equation (20') replaces the algebraic equation (20), the algebraic equation (21') replaces the algebraic equation (21)" on lines 1-3. There is a lack of antecedent basis for this limitation in the claim as to the referred equation(s).

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Claim 53 recites the limitation "wherein the algebraic equation (29') replaces the algebraic equation (29), the algebraic equation (30') replaces the algebraic equation (30)" on lines 1-3. There is a lack of antecedent basis for this limitation in the claim as to the referred equation(s).

OBJECTION TO CLAIM

Claim 44 (lines 1 and 6) is objected to for being dependent from cancelled claims in Paper No. 13, filed 20 April 2002. Claim 44, also, appears to depend from multiple claims, which is further objected to.

Appropriate Correction Is Required.

No Claims Are Allowed.

EXAMINER INFORMATION

Papers related to this application may be submitted to Technical Center 1600 by facsimile transmission. Papers should be faxed to Technical Center 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notices published in the Official Gazette, 1096 OG 30 (November 15, 1988), 1156 OG 61 (November 16, 1993), and 1157 OG 94 (December 28, 1993) (See 37 C.F.R. § 1.6(d)). The CM1 Fax Center number is either (703) 308-4242 or (703) 305-3014.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Channing S. Mahatan whose telephone number is (703) 308-2380. The examiner can normally be reached on M-F (8:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael P. Woodward, Ph.D., can be reached on (703) 308-4028.

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Any inquiry of a general nature or relating to the status of this application should be directed to Legal Instruments Examiner, Tina M. Plunkett, whose telephone number is (703) 305-3524 or to the Technical Center receptionist whose telephone number is (703) 308-0196.

Date: *March 21, 2003*

Examiner Initials: *CSM*

Marianne P. Allen
MARIANNE P. ALLEN
PRIMARY EXAMINER
~~GROUP 1800~~
AO1631